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THE AMERICAN CAVE-DWELLERS: THE  
TARAHUMARIS OF THE SIERRA  
MADRE.

BY CARL LUMHOLTZ.

My explorations in Northern Mexico extended over a period of three years. It was in September, 1890, that I entered, with eight scientists and assistants, the upper portion of the Sierra Madre, the Mexican prolongation of the Rocky Mountains.

In this first expedition we made excavations of the ruins near Casas Grandes, in Chihuahua. Several months were spent in the United States in 1891, and I then resumed operations in Mexico, following the Sierra from Casas Grandes to the border of the State of Durango, until the summer of 1893, and pursuing the work for the greater part of the last fourteen months wholly without assistance.

My first care on returning to the United States was to visit the Chicago Exposition, where I had occasion

to admire the superb reproductions of the Cliff Dwellings, which attracted and interested so many of the visitors to that great display ; but I have been surprised to find, in various parts of the country, an accepted belief in the existence of cliff-dwellers at the present day.

This belief is in some measure due to inattention and to a confusion of ideas, though much of it must be referred to the reckless utterances of a traveller, lately deceased, to whose statements the anthropologists of America have for a long time ceased to attach any weight.\*

Cave-dwellers are found among the following tribes, counting from the north : The Southern Pimas, the Tarahumaris (as well as the allied Varogios), and the Tepehuanes. All these tribes inhabit the State of Chihuahua, and are more or less mountaineers, living almost entirely in the great Sierra Madre range. Of these people the Tarahumaris are most attached to caves, the Tepehuanes the least. All are linguistically related, and belong to the Pima, or as Dr. Brinton terms it, the Uto-Aztec stock. In some of their customs and manners they also greatly resemble each other, while in others, as well as in character, they are strikingly different. Very little that may be called accurate was known of these tribes. The Tarahumaris, the most primitive of them and the least affected by Mexican civilization, are the most interesting, and I

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\* The allusion is to Lieut. Schwatka, whose fantastic story of the cliff-dwellers, discovered by him on the well-beaten Urique and Batopilas road, received the unmerited honour of translation into German in *Globus*, LXIII Band, S. 254-257, as a contribution to knowledge.—ED. BULLETIN.

shall confine myself in the following remarks almost exclusively to this ancient people, who may justly be termed the living cave-dwellers of the American Continent. Ancient remains are nowhere numerous in northern Mexico, and as soon as one enters the regions inhabited by Indians they almost disappear. Thus it is a rare thing to meet with old cave-houses; those found are of grit, always very simple and wretchedly small. The Indians of to-day attribute the majority of them to a mysterious people, the Cocoyomes, who were small of stature, did not till the soil, but ate each other and the Tarahumaris, or green herbs, and had other characteristics of the brute. While I have found corpses buried inside some of the houses said to have been built by the Tubares, a tribe now nearly extinct, the dead are commonly found in special caves quite numerous throughout the Sierra, and frequently disturbed by roaming Mexican treasure-seekers, who leave few caves untouched.

The natives rightly count only three seasons, namely, the dry, the rainy, and the winter. Snowfalls in winter are by no means unknown on the high land. The climate of the Sierra, although not so very pleasant on account of the winds, is extremely salubrious, the heat never becoming enervating, as it does not exceed 90 degrees, while the nights are deliciously cool. Lung diseases are unknown, and the sanitary condition of the Sierra is excellent.

Down in the barrancas, where the heat becomes at times excessive, the climate is very far from salubrious, and I have seen even Indians ill with fever and ague, contracted generally in the rainy season. Between

these two extremes, I have never experienced a more delightful climate than upon the slopes of the Sierra down towards the warm country. The air is pure and the temperature remarkably even. There is a story to the effect that a Mexican woman who settled in that part of the country broke her thermometer because the mercury never seemed to move, and she thought that it must be out of order.

The climate of the country as a whole is remarkably dry, and for the last two years there has been an unusual drought. As Indian corn will grow with a moderate amount of rain, it generally does well both on the high land and in the barrancas.

This country, thus comprising the high lands, the barrancas, and the wild slopes towards the west, is inhabited by the Tarahumaris, of whom the greater part live in the pine-clad plateaux. These people, who formerly had a much larger territory, are found between the latitudes of  $25\frac{1}{2}$  degrees and 29 degrees, from the pueblo of Temosachic south toward the border of Durango. Mexican civilization has long ago encroached upon their territory, and, even in the Sierra, Mexican ranches have absorbed the best part of the soil. However, in the central part these Indians still have absolute dominion, and no white man dares to interfere with the natives' right to the soil.

The tribe is little affected by civilization. Firearms are hardly known and they still use bows and arrows. Nominally Christians, they cling to their old beliefs, and are lapsing into heathenism. Some of them meet at the church on Sundays, to hear prayers, and on feast-days they mingle their heathen dances and sacri-

fices with semi-Christian ceremonial. Their churches are in ruins, and there is only one padre for the whole Tarahumari country.

A few of them speak a little Spanish, but the majority do not know that language; and in the most remote parts of the barrancas are found several thousand genuine pagans (called *Gentiles* by the Mexicans), who do not associate with the so-called Christians and who do not understand any other language than their own.

I selected as a base of operation a small Mexican ranch, called Guachochic (place of herons), whence I made excursions lasting from three to five months, and where I kept my stores of provisions and trading material, with such collections as I made. While travelling on the high land I used mules; in the barrancas I had to go on foot, hiring Indians as carriers. We slept under a stone or a tree, or wherever chance guided us, depending for food chiefly upon the Indians. My staple food for the last fourteen months has been corn,—corn in all kinds of Indian fashion, from corn-cakes (tortillas) to the grains simply roasted upon a broken piece of crockery over the fire. Having the happy faculty of liking most aboriginal dishes, I have often resorted to the herbs and roots eaten by the Indians in the cooked or the crude state, and have found some of them very palatable.

I experienced at first considerable difficulty in associating with these Indians, who are extremely distrustful of strangers. Frightened by some skulls that I had excavated, they took it into their heads that I was a cannibal, and lived entirely upon women, children and green corn. They used to disappear wherever I trav-

elled, so that at one time my task appeared almost hopeless. Fortunately, when I began my investigations alone, I had the good luck to start out with rain. The Indians had for months and months been praying and dancing for rain, which now, for some weeks, seemed to follow me. They soon associated my presence with the rain, and from that time on I was of good omen to them. They were now pleased to pose before the terrible camera, which, in their eyes, had become so powerful a rain-maker.

These people live in many different kinds of habitations, the variety of which is very remarkable. The majority use a kind of house consisting of a framework of four poles, on which rests a roof made of a double layer of split pine logs. Towards this framework lean the slanting walls of loose boards.

There are also regular log-houses, with doors, but no door-jambs. Where the climate is genial are found mere straw houses. Sometimes these houses consist simply of a roof of boards or thatch, or even earth, resting on four poles, or a lean-to without walls. In the pueblos the Tarahumaris live in houses made with stones and adobe. But in this country of weathered porphyry and interstratified sandstone, where natural caves and shelters are numerous, the Tarahumaris also make a free use of such habitations, to such an extent that they may be termed the living cave-dwellers of the American Continent.

Some of them are permanent cave-dwellers; for there are barrancas and arroyos where cave-dwellers may always be found; but most of the Tarahumaris are only temporarily so. The so-called Christian Tarahu-

maris on the high land live during the winter in the villages or pueblos, while they spend the rest of the year at their ranches in the mountains, living in wooden or stone hovels. Many of them do not come to the villages at all, as the missionaries taught them to do, but go into caves in the winter, *se encuevan*, as the Mexicans say. Thus in the neighborhood of Nara-rachic many Christians are cave-dwellers during the winter, but in summer most of them leave the caves for fear of the scorpions, tarantulas, "vinagrones" (*telyphorus*) and other pests which in the warm weather frequent the rocks. Within the memory of man, many caves have been abandoned for good, owing to the encroachment of the Mexicans upon the land of the Tarahumaris, the latter disliking the neighborhood of white men. As regards the pagans (Gentiles), who still in considerable numbers are found in the remote barrancas very difficult of access, they all love caves, but their mode of life is shifting. They plant corn high upon the crests of the barrancas in March, and when the rain begins in June and July they descend into the cañon to plant corn there. Subsequently they harvest, first upon the high ridges, then in the barrancas, where they retire for the winter to enjoy the warm temperature, living on the high land in wooden shelters, in the barrancas in caves, or under a big stone or a tree, as the case may be.

The heathen in the barrancas cultivates corn, beans, chile and tobacco, but upon a small scale, owing to the fact that the soil is scarce, and he has to build stone walls in order to retain his scanty supply, and add to it whatever the rains rushing down the mountain-sides



may bring. In that way small terraces (riffles) are formed, exactly of the kind to be seen so often farther north, in the Sierra and in the southwest of the United States, and abandoned ages and ages ago.

The greatest number of inhabited caves is found in the western part of the Sierra toward Sinaloa. It is seldom indeed that the caves are improved. I have, in a few cases, seen partitions of stone and adobe in them, but these never reach the top of the cave. The most common improvement is a loose stone wall in front of the cave, as high as a man's breast, as a shelter against the wind. The caves are rarely found in inaccessible places, like some in the United States. If they are difficult of access, they are made accessible by one or two wooden ladders, or rather notched trunks of trees. The caves are always found apart, at a distance of from one hundred yards to a mile or more. I heard of one arroyo where six can be seen at the same time, distant only from thirty to fifty yards apart; but this is a rare case. It is also rare to find more than one family living in the same cave; if so, the people are always near relatives.

When the caves are permanently inhabited, they are fitted up as are their houses, with the same utensils, the grinding-stone, baskets and jars. The fire is in the middle of the cave, and the floor is often cemented with adobe.

The storehouses, so necessary to the household life of the Tarahumaris for storing corn and clothing, are never missing in the caves. They are built of stone and adobe along the inner walls, and serve as big closets. The largest inhabited cave I have seen was

nearly one hundred feet in width, and from twenty to forty feet in depth. If the caves are very deep, the Indians live near the mouth. Never do they excavate caves or holes for habitations. These storehouses are quite an institution among the Tarahumaris, and are besides found everywhere in remote places, perched generally on high rocks or on boulders. Very often caves in places difficult of access are walled in and used as storehouses.

Although the Tarahumari is not nomadic, his life is shifting. He removes his domestic animals according to season, and plants corn in different localities, moving accordingly. On the highlands the Tarahumaris are certainly more permanent, and here the best wooden houses are found. Here they may even be found living in ranches of from five to six families. One ranch has at least twenty-five families, but even here on the high land a Tarahumari never lives all his life in the same house; if any one dies, the house is pulled down and removed. A peculiar custom among the Tarahumaris is that at night the father and mother will leave the house or cave to be taken care of by the children, while they go to sleep under a tree, in the shelter of the storehouse, or in some other cave, according to convenience.

The fact that people live in caves is in itself extremely interesting, but this alone does not prove any connection between them and the ancient cliff-dwellers, who lived in common, while the cave-dwellers of to-day are unsocial and isolate themselves. They are the old cave-dwellers who probably lived in caves long before the people of the Southwest, pressed by enemies, made

their remarkable homes in the cliffs and caves. To-day they still preserve ancient practices and customs, which other Indians have lost either wholly or in part.

Although the Tarahumari is very intelligent, he is backward in the arts and industries. His pottery is exceedingly crude, as compared with the work found in the old cliff-dwellings, and its decoration is infantile as contrasted with the cliff-dwellers' work. Moreover, he is utterly devoid of the architectural gift which resulted in the remarkable rock structures of the early cliff-dwellers. These people, so far as concerns their cave-dwelling habits, cannot be ranked above troglodytes.

The Tarahumaris, according to their own traditions, came from the north and east, the same countries as the Apaches, they say, and were placed in these mountains, the middle of the world, by their god, who put one cross where the sun sets and one where it rises. The cross in the east their god uses when he comes down to visit the Tarahumaris ; that in the west is for the Tarahumari when he dies and goes to heaven. Between these two crosses lives the Tarahumari tribe. The Indians would like to go to the crosses and dance before them, one of their forms of worship ; but they are prevented from doing so by large bodies of water, and they therefore all have small crosses standing outside their own houses, before which they hold their nightly dances. They also sacrifice before these crosses, and here is where their god comes to eat.

The Tarahumari of to-day is of a medium size and a dark-brown color. The people of the barrancas are smaller than those of the highlands. The Tarahumari is more muscular than most of our North American

Indians. Their cheek-bones are prominent and their expression is heavy. The woman is smaller than the man, but generally just as strong, and when angered by jealousy is often able to beat her man. They are rapid walkers, gliding smoothly along with quick steps, with the body very slightly bent forward, and without any swaying to and fro.

Both men and women wear long, flowing, straight black hair, in rare cases wavy, which they, like the southern Pimas, comb with pine-cones. It is held together with a woollen headband made for the purpose, or with a narrow plaited band of palm-leaf. Their teeth are exceptionally fine, and the canine teeth are not readily distinguished from the incisors. Beards are very rare, and if one appears, the Indians pull it out with great care. Their devil is always represented with a beard, and they call the Mexicans "the bearded ones."

The men wear a breech-cloth held up with a girdle, the women a petticoat and girdle, while in cold weather both sexes have tunics and blankets. The women are clever in weaving blankets, girdles and clothing on primitive looms lying on the ground. In contrast with most other savage races, these Indians are not fond of ornaments. The women wear hanging ear ornaments of mother-of-pearl and necklaces of grass-seed. The men may chalk ornamental designs on their faces and legs at the foot races, but few of them wear necklaces. A singular fact is that mirrors have no attraction either for the men or women; they do not want to look at themselves.

The Tarahumaris cultivate corn, beans, potatoes,

and also in the barrancas tobacco and chile (Sp. pepper). Their chief dish is what the Mexicans also use to a great extent, and call pinole—toasted corn, ground to a flour on a stone, and mixed with cold water. It is cooling and nourishing, but rather indigestible. As a luxury corn-cakes (tortillas) are eaten. From the harvest, which is in September and October, until February, the Tarahumari lives well, but starves from that time until the next harvest, subsisting chiefly upon herbs and the flesh of small animals, particularly squirrels and rats. A great many seeds, roots and the young shoots of the ash tree serve him for food.

In the dry season the Indian subsists almost wholly at times upon the baked heart of the maguey. This sweet stuff, which is also eaten with pinole, is to me frightfully indigestible. The Tarahumari likes to have meat every day, although he cannot always get it. He rarely or never kills any of his domestic animals for food, but goes hunting with his bow and arrow, and is also extremely ingenious in trapping animals. In order to get one squirrel, the Indians may cut down as many as ten pine trees, a whole day's work. They poison the waters of the rivers by means of the bark of certain trees, and also by herbs, stupifying the fish, but not making them uneatable. In the barrancas of the river Fuerte large parties of them may be seen fishing at night in this manner, observing several interesting ceremonies.

Later on in the summer, in places where the river is deep, they may be seen fishing with nets made by fastening some sixteen blankets together lengthwise with wooden splinters.

They are abstemious when at home, eating only twice a day; but when serving the Mexicans, they gorge themselves to illness. They generally rise at night, however, to eat and to play on the home-made violin, of the music of which they are very fond.

They show, even when in a starving condition, a remarkable endurance. An Indian has been known to carry a letter from Guazapares to Chihuahua and back again in five days, the distance being, as reported, more than 100 miles a day. In some parts, where the Tarahumaris serve the Mexicans, they are used to run in the wild horses, driving them into the corral. They will pursue deer in the snow, or with dogs in the rain, for days and days, until at last the animal is cornered and shot with arrows, or falls an easy prey from sheer exhaustion, its hoofs dropping off.

Their senses are keen, but in this respect they are not much superior to well-endowed civilized men. They certainly do not feel pain in the same degree that we do.

The Tarahumaris are very fond of heat, and may often be seen lying on their backs or stomachs in the sun. Heat never seems to trouble them. I have seen young babies sleeping with uncovered heads on the backs of their mothers, exposed to the fierce heat of the summer sun. In the pine regions, where they live longer than in the barrancas, it is not infrequent to meet men and women who are at least one hundred years old. Long life is what they pray for. Old people are many; their hair is gray, but they are seldom bald.

The attraction of these people is their wonderful

health, which may be looked upon as a matter of course in that delightful climate of the highlands. However, they are subject to pleurisy (*dolor de costado*), which generally proves fatal.

The Tarahumari woman is a good mother and takes great care of her children, of whom she generally has from six to eight, or even more, and she nurses them until they are three years old. A boy or girl is never punished, although often scolded. If a boy misbehaves, the father may reproach him at a feast or before one of his friends, and the friend may also talk to the culprit. The children are very independent, and if angry the boy may strike his father or mother.

The woman bears her child alone, and the husband makes no inquiry about the baby. When three days are over, the mother bathes herself, but the child is not washed until one year old. While she is bathing she leaves the little one naked in the sun, in order that he (the sun father) may recognize his newly-born son ; and the baby is left thus, in spite of its wails, for about an hour. Then the shaman comes to "cure" it, so that it may become strong and live a long life, carrying it over smoke of the mountain cedar, three times toward each cardinal point and also three times backward ; with a firebrand he makes three crosses on the child's forehead if it is a boy, and four if it is a girl.

As a rule, the Tarahumari is not a thief, but if he thinks himself quite unobserved and safe, and the temptation is very strong, nearly every one will steal. He never cheats, and is a pleasant fellow to deal with so far as honesty goes. He is averse, however, to selling anything, and considers it a favor. In fact, when

you succeed in making a bargain with an Indian, the mere fact establishes a species of foster brotherhood (when you and he call each other *nanagua*), and this facilitates later transactions. Time for consideration is thought absolutely necessary by the Indian. To buy a sheep requires at least two hours. In all bargains he always consults his wife, and even his children; and if any of them, even the youngest, objects, nothing can be done. To conclude a bargain about an ox may require three days. The almighty dollar has no power with most of them. The Indian has no need of money or of aught that money can buy for him, and he is swayed more by persuasion than by silver. He is rich when he has three or four cattle, with some sheep and goats. Silver Mexican dollars from outsiders are accepted in exchange for corn and other products, but among themselves a system of barter prevails. In most cases cotton cloth is preferred to dollars.

The Tarahumari is heavy and phlegmatic. His face is devoid of expression, and it seems at first hopeless to the traveller to get any information out of him. He is timid, and tries to run away at the sight of strangers, leaving his house or cave and its contents behind him. It is hopeless to follow, because the country is extremely rough, and they hide so effectually. When I travel I therefore always send an Indian to prepare the way for my arrival. The women and children are bashful in the extreme, which may be due to the sharp criticism and gossip common among them. Their chief trait is distrustfulness, but it may be overcome, although they seldom become absolutely trustworthy friends. They have no depth of character. Gratitude



is fairly developed. They are cowards when few in number, but if there are many, they know no fear. They are the only Indians who have held their own against the Apaches.

They are rather affectionate, but it is seldom that they show affection in public, unless when drunk. The Tarahumari is a polite personage for a barbarian, and has a word, "re-có," equivalent to "please," which he uses frequently.

Although they will give food to a stranger, if properly approached, they are not particularly hospitable, and there is no room in a Tarahumari house for a guest. If one Tarahumari visits another he never thinks of entering the house, but takes a seat on the ground, forty or fifty yards away. Nothing so angers a Tarahumari as the appearance in his house of a man unannounced. He might even kill the intruder. Only the dogs, they say, enter a house uninvited. It is not even polite to look at another man's house. So, if you want to get on well with an Indian, it is necessary to sit for at least a quarter of an hour near his hut, gazing into vacancy. Should the host be absent, the native visitor may sit near by for hours, and finally go away.

These people are devoted to foot-races, which are held the year round. They are poor, but they wager their bows and arrows, girdles, blankets, clothes, headbands, balls of wool, cotton cloth and beads.

At such races as these, two districts or pueblos always run against each other. Sometimes there are many runners on each side, and the two parties show in their apparel some distinguishing mark; for instance, one

side wears red headbands, while the other wears white ones. I have seen from four to ten runners taking part on each side. Each party has a small ball, about two inches in diameter, carved with a knife from the root of an oak tree, which they have to toss ahead of them as they run. The runner who happens to be ahead is the one whose duty it is to toss the ball with his toes, and at each toss it may be thrown a hundred yards or more in advance. They are not allowed to touch the balls with their hands, but their friends who follow them may point out to the runner where the ball is lying. The circuits over which the race is held are circular when the country allows; but generally the course is backward and forward along the top of a ridge, the group of spectators and betters being at the starting-point, which is always at the middle of the race-track.

In important races the runners may prepare for a fortnight, but as a rule they do not practice much before the race, for running comes to them naturally, as swimming to ducks. Their training chiefly consists in abstinence from native beer for two or three days before the event. On the day of the race the runners are fed with pinole only, they have tepid water to drink, and their legs are well bathed in warm water and rubbed by the managers. The shaman also rubs them with a smooth stone to make them strong.

In the afternoon before the race the managers (cho-qué-a-mi) and the runners meet together, the latter bringing the balls with them to receive an omen as to which party is going to win. Water is put into a big tray and the two balls are started simultaneously

from one end of the tray to the other. The party whose ball reaches the other end first will be the winner, and they repeat this as many times as there are to be circuits, and bet accordingly.

There are, moreover, no end of supernatural devices and observances mostly in the form of witchcraft and charms, called to the assistance of the runners and to the injury of the opposite party. A race is never won by natural means. The losers always say that they were influenced by some herb and became sleepy on the race-course. Many remedies are brought to the contest to strengthen the runners and to weaken their rivals. There is no prize given, but it is the custom for a man who has been very lucky to give to the successful runner some light articles made from wool or cotton, but no money. On the day of the race stones are laid on the ground in a row, one stone for each circuit, and count is kept by taking away one stone for each circuit finished. It is from this practice that the tribe derives its name Tarahumari—from tará (count) and húmari (run)—people who run according to count.

Trees are marked with crosses, so as to show the circuit to be run, and watchmen are placed to see that no cheating is done. The women, as the runners pass, stand ready with dippers of warm water, or pinole, to refresh them. The wife of a runner may throw a jar of tepid water over him as he passes. Drunken people must not be present, nor pregnant women, because they make the runners heavy.

Most of the men and women follow the race, shouting to the runners to spur them on, and pointing out to

them where the ball is; and if night comes on they light resinous torches, and the race is continued.

A circuit may measure from 9 to 12 miles in length. They may agree upon from 5-20. Good runners make forty miles in from six to eight hours. The greatest runner I have heard of, could run from midday to sunrise. Women hold their own races, one valley against another. They do not toss the balls, but use a long wooden fork. At other times the women use a curved stick with which they throw before them a ring of twisted fibre. The game with rings is very ancient, and similar rings have been excavated from the cliff-dwellings.

The pivots around which the thoughts of these Indians move are rain and native beer. In their dry country rain is of the utmost importance for their crops, and without crops they do not get their *su-wi-ki* (beer made from maize). The Indian is inordinately fond of this, besides which he needs it for his ceremonies. No act of importance can be done without it. *Su-wi-ki* is given with the mother's milk to the infant to "cure" it. The dead get no rest without some of this beer being set apart for them, and it is the great remedy in the hands of the shamans, and never do they use it without first sacrificing a part to their god, who is as eager for this drink as they are. In making it, the moist corn is allowed to sprout, when it is ground and boiled, and the seed of a grass resembling wheat is added as a ferment. The liquor is put in large earthen jars, used only for this purpose, and is drunk when twenty-four hours old, or even sooner, because the jars are not strong. A row of these jars, inverted, is a

common sight outside of all Tarahumari houses or caves. The Indians drink incredible quantities of this liquor, which is white in color and resembles beer, and is called *tesvino* by the Mexicans, who also make it.

Dancing with the Tarahumari is a work to secure rain and good crops and to ward off evil. His word for dancing is *to work*, and the idle young men are frequently admonished by their elders, who say to them, "Why do you not go to work?" meaning: Why do you not dance? There are four or five kinds of dances practised. These imitate the motions of animals, and the songs implore the animal's help. The birds that sing in the spring, sing for rain. The crickets, the turtles, the fish, the frogs all help to make rain, and all dance. The deer, in the pairing season, taught them to dance their great dance, Yúmari, and the wild turkey taught them their other great dance, Rutubúri.

The first-named is a species of walk-around, in which the men forming a semi-circle and holding each other by the arm, march with lock-step, while the women in a similar concentric ring dance behind the men. Both men and women are wrapped in their blankets, the women often carrying their sleeping children on their backs. In the Rutubúri, the leader stands in the centre of a line, the men on one side of him and the women on the other; the dance consists in moving the line forward and then back, the women following the men at a little interval of time, for the place of the woman is always behind the man, although she is well treated, and her prayers have less value than his.

In dancing, men and women wear their blankets and

the women carry their children in the fold on their backs, where the little one sleeps through all the motion, its head rolling in every direction, but without accident unless the mother is drunk. It is to the sun and moon, their "high father" and "high mother," that they dance. An Indian seldom smokes in the daytime unless he is drunk, for he would offend the sun by so doing. The shaman, however, uses cigarette smoke in his prayers to the moon for rain. When at their dances, it is considered essential to observe a strict formality, to refrain from laughing or talking in a loud voice, and from making any unnecessary kind of noise. As it is difficult to preserve such decorum when large numbers of people are present, the pagans often depute one man to dance and sing as their representative, while the rest work in the fields. This lonely worshipper is doing his share of the work, and his dancing may go on all night. The Indians told me that such worship was exhausting, even to an Indian.

At the festival there is generally one singer who shakes a rattle in time to the melody or song, and who leads the dancing. Native beer and boiled meat are sacrificed or thrown up with the dipper into the air towards the four corners of the world by the master of the house, first towards the east, then to the west, to the north, and the south.

Also very characteristic of the religious life of the Tarahumari is their plant worship. To the Indian everything in nature is alive, and even the plants could not grow if they had no soul. Many of them are supposed to talk, to sing, and to feel pain like ourselves.

There are five or six kinds of plants, species of *mammillaria*, or small cacti, called Híkori,\* that live for months after they have been rooted up, and which are even worshipped. They look upon these plants as individuals, to be treated with the utmost respect, in fact as demi-gods to whom sacrifice must be offered. The chief benefit sought from this plant worship is the good health of the tribe, but there are also many other advantages to be gained by having the plants in their storehouses, or wearing them about their persons. Thus they drive off wizards, robbers, and Apaches, and make the eyes large so as to see the sorcerers. These Híkori are found growing in the ranges east of the Mexican Central Railway. When they are needed by the tribe, ten or a dozen Tarahumaris start out to gather them, first using copal incense and abstaining from certain dishes. They are very careful not to injure the plant in taking it up because the holy plant would get angry. Strange to say, although used for making an intoxicating drink, these Híkori are very virtuous and cannot endure the sight of anything wrong or lascivious. So they are kept in separate houses away from the Indian habitations.

The special shaman who devotes himself to Híkori worship draws with his finger upon the sand a mystical

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\* Dr. Benjamin L. Robinson, Curator of the Gray Herbarium, Botanic Garden, Cambridge, Mass., has kindly determined the *hi-ko-ris*, as follows:

1. Muláto, *Mammillaria micromeris* (Engelmann).
2. Rosapári, a more advanced vegetative stage of the same species.
3. Sunamí is apparently a robust form of *Mammillaria fissurata* (Engelmann).
4. Híkori wanamé is *Mammillaria (Anhalonium) Lewinii* (Hennings).

figure, in the centre of which he plants the Híkori.\* This he covers with a gourd, upon which he rests the end of a notched stick, which he rasps with a piece of wood, so as to produce an accompaniment to his song. Híkori is fond of noise, because "he" is powerful. While the shaman sings, a man or a woman is dancing before him, twirling on the toes. The ceremonies continue all night. If the shaman stops for a moment to rest, he asks permission of the Híkori, and formal salutations are exchanged. Híkori is a very important personage, and it is necessary to lift one's hat before approaching him; the Christian Tarahumari makes the sign of the cross. He is saluted as if he were a Tarahumari, with the formal and customary salutation, and is supposed to make the customary answers.

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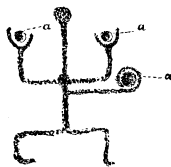
\* My friend, Mr. Cushing, informs me that similar, almost identical, drawings are found depicted on the lava rocks of Arizona.

He says, in a letter dated October 30, 1893:

"The figure you sketch for me is closely allied, for example, to very ancient ritualistic petrographs in the lava regions of Arizona. You will see this at a glance by the figure of one of these petrographs, which I reproduce in juxtaposition to yours.



*Tarahumari Medicine-figure.  
Mexico.*



*Ancient Ritualistic Petrograph.  
Arizona.*

Others which I have recorded are even more strikingly similar, and when I come across them I will gladly make tracings of them for you.

I have always supposed that these figures were designed for 'medicine' ceremonials, but thought of them rather as pertaining to the medicines of the elements—wind, rain, water, etc., used in connection with sacrifices (with which ceremonial rites were terminated), than as connected with *actual* medicinal cere-



Once I wished to taste the Híkori, which was new to me. After a lively discussion I was told that I might sit with the shamans, on condition that I should take off my hat. It was a cold night, but I obeyed, and put on a handkerchief. The man who carried the gourd containing the drink danced with it in front of the shamans, then around the fire, and then brought it to me. It resembled in taste the Peruvian coca, but was not disagreeable, and although I drank but half a glassful, I felt it in a few moments. It made me wide awake, and acted like coffee, but was more powerful. This feeling lasted ten minutes, and was followed by depression, and a chill such as I have never before ex-

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monial. I was led to this belief by finding, in connection with some of them, little cup-shaped concavities pecked into the angles of the figures (as at *a a a*). You will observe that a line is drawn from the middle and straight portion of my figure, and coiled around the concavity at the right side, and that the terminations of the upper cross-lines are bifurcated around similar though smaller concavities. The entire figure represents a water-animal god, one only of a number of semi-human mythic monsters. For convenience, his heart is drawn out to one side, and within it is placed the cup of the '*chief*' medicine; while in his left hand is the cup of 'good' medicine, and in his right hand the cup of 'bad' (*i. e.*, '*strong*') medicine. If, in the light of this, you re-examine your figure, you will see with me, that it represents a MAN-GOD SITTING, his legs doubled under him, and his medicines distributed around and upon him according to his parts, and in accordance, also, probably, to their importance *and the case in hand*. He must always have the chief of all medicines placed on his heart as the 'renewer of life.' Then strictly with reference to the ailment to be treated and its location in the body or limbs of the patient (I should say) the other medicines. I throw this out as a suggestion, yet with much confidence in its at least approximate correctness, as indicated by my comparative studies. Probably a consultation of your notes and the remembrance of variations of the ceremony you have seen, will signify to you whether I am right or not. Remember that if these people have this ceremonial in connection with the treatment of disease, they will also have it in the treatment of *weather*, etc., when 'diseased,' so to say. You have opened up a new significance of many outlines among the older lava-remains, and if my record of these, in turn, has helped to explain your diagram, etc., you can judge of my pleasure and appreciation."

perienced. To get warm I almost threw myself into the fire, but it was not until morning that the feeling of cold was conquered. Some of the Tarahumaris told me that they had been similarly affected, and could not take it on that account. Neither women nor boys are allowed to touch Híkori. At the end of four years it loses its virtues and grows mouldy, when it is buried in a corner of the cave, or is taken back to the place from which it came and new plants are obtained. In the eastern part of the Sierra and in a few other districts, for instance in the foothills around the river Fuerte, Híkori is not used at all.

When the Tarahumaris return with the Híkori, a whole night's festival, including sacrifice of sheep and goats, with much dancing and beer-drinking, is held in honor of the plants. The pile of Híkori, perhaps several bushels, is placed under a cross and sprinkled with beer. Híkori is sold to the Gentiles in the barrancas who are too timid to go for it themselves. One plant costs a sheep, and the buyer holds a feast in honor of its purchase, and repeats the feast at the same time next year.

There are several kinds of Híkori, of which I have brought back specimens. The commonest is Wanamé (Superior), which, besides being used to make intoxicating drink, is famous as a remedy for fever and for snake-bites and burns. It is also supposed to prolong life.

Sunamí, which is also used for making an intoxicating drink, is of much greater efficacy, but the greatest of them all is Walula salíami, literally meaning a great authority. This is a rare plant which I have never

seen. It is said to grow in low clusters, from eight to twelve inches in diameter. All other Híkori are "his" servants. "He" requires oxen for food, and therefore few of the Tarahumaris can afford to entertain "him," but the shaman goes to see "him." If an ox is not killed for "him," "he" will eat the Indian. "He" never dies, and is called the twin brother of God.

Without his shaman, the Tarahumari would be lost. Every Indian has his doctor, exercising also the office of priest, who looks after his health, and guards his body and soul against sorcerers and evil influences. When the shaman sleeps, it is only in appearance: he is always on the watch in the service of his people. He travels through the air, and visits God whenever he chooses, and talks with him. He cures diseases with herbs and other medicines, but also by supernatural means, especially by pretending to suck the maggots and bad blood, with the help of a reed, from the patient's body. These shamans agree with other scientists so far as to attribute all curable disease to the presence of bacteria, but bacteria of a larger growth, such as lizards and frogs in the stomach, and even snakes in the legs.

Virtuous as they are held to be, the priest-doctors may suddenly lose the light in their hearts when they grow old, and become evil-doers or sorcerers. I saw one not less than ninety years of age who was looked upon with suspicion and was in danger of losing his life.

People accused of sorcery, without having any knowledge of this crime themselves, are frequently whipped, and in recent times have even been burned. But there are also sorcerers who pretend to powers of witchcraft,

and are much dreaded. Such sorcerers can render people ill, or even kill them by their mere thoughts or by incantations with peculiarly shaped stones, the dried body of a humming-bird, the fore-leg of a frog, and so on. The same shaman may cure as well as kill.

The dead are wrapped in blankets and are buried in caves almost before they are cold. At the spot where the man died is placed food, and ashes are scattered that the tracks may show what animal came to eat. It is believed that the dead takes the shape of an animal for a year. During this period feasts are held, three for a man and four for a woman, to release the dead person from animal shape, and get him into heaven.

A bad man is only to be got into heaven by hard work, with sacrifices of beer and meat and much eating, drinking and dancing, to introduce first his head and gradually the rest of his body, but for sorcerers and for people who cannot pay the shaman there is no hope. Not even the sacred Híkori will release such persons from the beast shape.

In the heart of their territory the Tarahumaris are pure Indians, but those of the frontier are of mixed blood and speak Spanish. They are not diminishing in numbers, and the few who have had opportunities have shown capacity and ambition. A priest, whose charge is among them, assured me that he held some of them to be great men. However this may be, I have no doubt that advancing civilization will add to Mexico in these people thousands of honest and intelligent citizens.